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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Domenico Cairola

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EXAMINER

EDWARDS, JERRAH

ART UNIT

PAPER NUMBER

3667

MAIL DATE

DELIVERY MODE

04/27/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,494

Applicant(s)

CAIROLA ET AL.

Examiner

JERRAH EDWARDS

Art Unit

3667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/05/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 3 is objected to because of the following informalities; claim 3 should be amended to depend from claim 2, as there is insufficient antecedent basis for “said headset” and “said microphone” in claim 1.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee (US 6,016,385) in view of Reichlen (US 6,396,497).

4. **Regarding claim 1**, Yee discloses a mission control system (command station 12, Fig. 1) including:

an operator station (see Fig. 2);

a head-mounted display worn by an operator (virtual reality helmet 13, Figs. 1 and 4);

digital gloves worn by the operator (see Fig. 6);

a tracker for tracking the movements of the head-mounted display and the digital gloves (encoder 26, Fig.2; see col. 5, lines 5-10, operator’s head movements are sensed and col. 6, lines 15-31, operator’s hand movements are sensed); and

a mission computer (communication system 14) connected to the head-mounted display, to the digital gloves, and to the tracker, to allow the operator to impart gestural commands by means of the digital gloves, and to receive visual information by means of the head-mounted display (see col. 3, line 63 to col. 4, line 8, communication system 14 transmits commands to remote device and returns signals related to auditory, visual, and haptic conditions of the remote device's surroundings).

Yee does not explicitly state that the computer is housed in the operator station, however, Reichlen discloses a similar operator station with a compartment holding a computer 14 mounted at the base of the chair 12 (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to house the computer in the operator station as taught by Reichlen in order to locate the computer near components of the system to which it may connect, as shown in Fig. 1.

5. **Regarding claim 2**, Yee discloses a headset worn by the operator (virtual reality helmet 13), however Yee does not explicitly address the inclusion of a microphone. Reichlen discloses a computer user interface with head motion input, which includes a microphone worn by the operator (Fig. 9, headset 161 also includes a microphone 166) and that the headset and the microphone being connected to the mission computer to allow the operator to impart voice commands by means of the microphone, and to receive audio information by means of the headset (Fig. 15, microphone 166 is connected to computer 14 A). Reichlen teaches that these features allow the user great freedom of motion while interacting with the visual display (col. 14, lines 3-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made

to use these features disclosed by Reichlen with the system disclosed by Yee in order to allow the user to freedom of motion while interacting with the visual display.

6. **Regarding claim 3**, Reichlen further discloses that the headset and the microphone are integrated in the head-mounted display (Fig. 9, showing headset 161 and microphone 166 integrated with head-mounted display 162). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use these features disclosed by Reichlen with the system disclosed by Yee in order to allow the user to freedom of motion while interacting with the visual display.

7. **Regarding claim 4**, Reichlen further discloses that the head-mounted display displays a window (display window 36, Fig. 2) movable within a larger work window (virtual view space 40, Fig. 2) in response to movements of the head-mounted display (col. 6, lines 15-28, the user may navigate the virtual view space 40 by rotating his or her head from side to side, tilting his or her head up or down, or swiveling in chair 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use these features disclosed by Reichlen with the system disclosed by Yee in order to allow the user to freedom of motion while interacting with the visual display.

8. **Regarding claim 5**, see the arguments presented above with regard to claim 1.

9. **Regarding claim 6**, Yee does not explicitly address these features, however Reichlen discloses a similar operator station with a compartment holding a portable electronic device, computer 14, mounted at the base of the chair 12 (Fig. 1). Therefore, Reichlen implicitly discloses a compartment, which one of ordinary skill in the art would recognize may be used to house any portable electronic device sized appropriately. It

would have been obvious to one of ordinary skill in the art at the time the invention was made to house the head-mounted display and the digital gloves in the operator station, in order to locate the connected components of the system in proximity to one another, as shown in Fig. 1.

10. **Regarding claim 7**, Yee further discloses a hand control fitted to the operator station (Fig. 2) and connected to the mission computer communication system 14) to permit remote control of electrooptical devices (robot, Fig. 3).

11. **Regarding claim 15**, Yee further discloses that the tracker includes a transmitter (see col. 3, line 63 to col. 4, line 8, communication system 14 transmits user commands);

two receivers associated respectively with the head-mounted display (encoders 25 and 26, Fig. 4) and at least one of the digital gloves (sensor 61, Fig. 6); and

a central processing unit (communication system 14) connected to the transmitter and to the receivers to track the movements of the head-mounted display and the digital gloves (see col. 3, line 63 to col. 4, line 8, communication system 14 transmits commands to a remote device). Yee does not explicitly state that the transmitter is housed in the operator station, however, Reichlen discloses a similar operator station with a compartment holding an electronic device (computer 14) mounted at the base of the chair 12 (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the transmitter such a compartment in the operator station as taught by Reichlen in order to locate the computer near components of the system to which it may connect, as shown in Fig. 1.

12. **Regarding claim 16**, the examiner takes Official Notice that it was notoriously well known in the art at the time of the invention to provide a display fitted to the rear face of an operator seat, as evidenced by the prolific use of such arrangements in, for example, mass transit and passenger vehicles where media controlled by a driver may be viewed by multiple passengers on, for example, a screen mounted to the back of the driver's seat or to the back of the seat immediately in front of the passenger. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a display fitted to the rear face of an operator seat to relay the images displayed on the head-mounted display, in order to allow additional user to view what is being displayed.

13. Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee (US 6,016,385) in view of Reichlen (US 6,396,497), as applied to claim 1 above, and in further view of Official Notice.

14. **Regarding claims 8-10 and 12-14**, the examiner takes Official Notice that joysticks, pointers, trackballs, keyboards, and removable external filing devices (which are construed to be external storage devices per the specification at pg. 12, lines 5-11) are devices that were notoriously well known in the art at the time of the invention to be portable and easily connected to or interfaced with computer systems and/or operator consoles in order to allow a user to interface with a computer system, as evidenced by their prolific use in consumer products like laptops, PDAs, and video game controllers. It would have been obvious to one of ordinary skill in the art at the time the invention was

made to locate any combination of these devices in any convenient configuration in the system disclosed by Yee, in order to allow the user to interface with the computer system.

15. **Regarding claim 11**, the examiner takes Official Notice that biometric sensors, including identification devices such as fingerprint or iris scanners, configured to permit access to electronic devices by authorized operators are devices that were notoriously well known in the art at the time of the invention to be portable and easily integrated into various computer systems and peripheral devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate biometric sensors in any convenient configuration into the system disclosed by Yee, in order to provide identification of a user.

16. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee (US 6,016,385) in view of Reichlen (US 6,396,497), as applied to claim 1 above, and in further view of Lamb (5,252,069).

17. **Regarding claims 17 and 18**, which recites a vehicle/aircraft that includes a mission control system, Yee and Reichlen do not explicitly address including the mission control system in a vehicle, however Lamb discloses a similar head-mounted device to be worn while piloting aircraft (Fig. 1). Lamb teaches that its device is more comfortable for the user (col. 1, 66-68). All of the features of claim 1 are attached to the headset and/or known portable devices which may easily be relocated so as to be located in the vicinity of the headset in a vehicle where the head-mounted display is to

Art Unit: 3667

be worn. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the head-mounted display disclosed by Yee in a vehicle, such as an aircraft, as taught by Lamb in order to provide a comfortable operator device and to provide the additional components disclosed by Yee and Reichlen in the vehicle/aircraft, in order to locate the connected components of the system in proximity to one another.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRAH EDWARDS whose telephone number is 571-270-3044. The examiner can normally be reached on Monday through Friday, 10:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on 571-272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3667

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. E./

Examiner, Art Unit 3667

/Mary Cheung/

Primary Examiner, Art Unit 3667